

# **Environmental Assessment**

BUILDING OF OFFICE FACILITIES

on

TEXAS POINT NATIONAL WILDLIFE REFUGE, JEFFERSON COUNTY, TEXAS

**11/1/09**

**Prepared By**

**Refuge Staff  
McFaddin/Texas Point National Wildlife Refuge  
Sabine Pass, Texas**

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## 1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION ALTERNATIVE

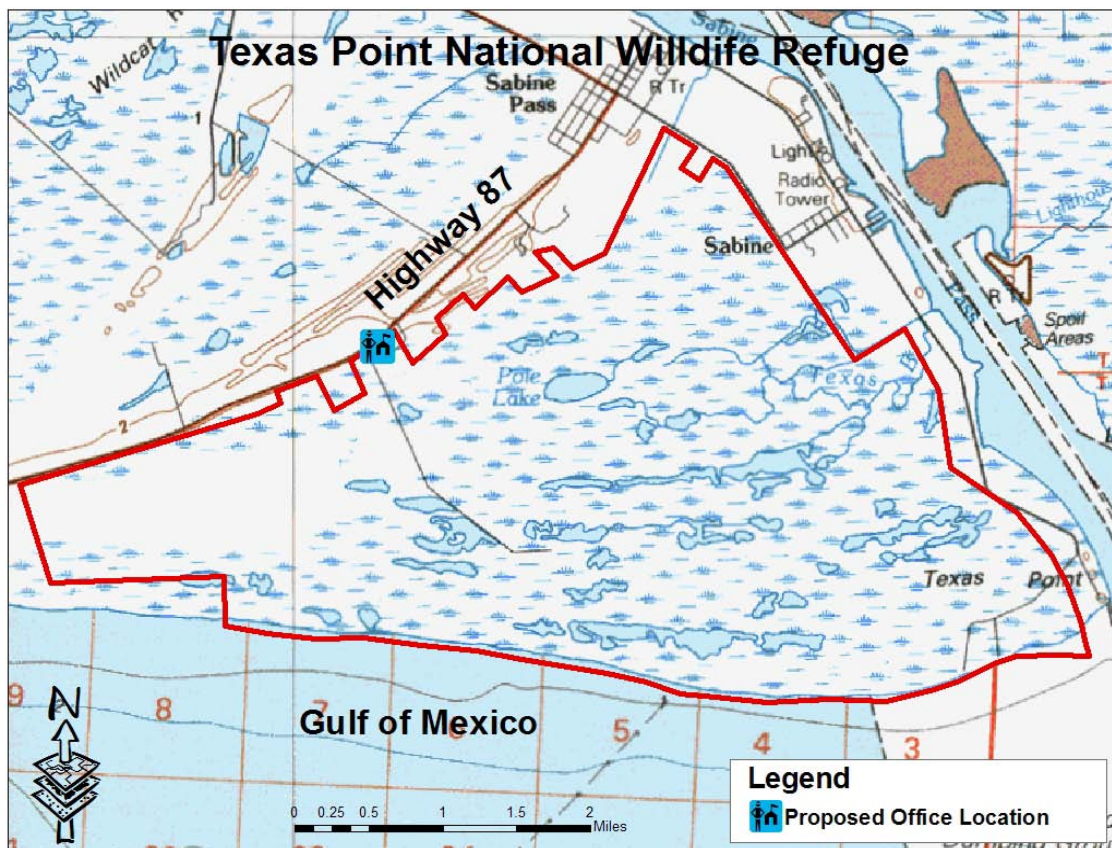
### 1.1 Introduction:

The U.S. Fish and Wildlife Service is proposing to construct a new office facility at Texas Point NWR near Sabine Pass, Texas. This facility will be constructed to replace the McFaddin and Texas Point National Wildlife Refuges office facilities that were destroyed during Hurricane Ike. The facility will be approximately 3,600 square feet, and consist of seven individual offices. The facility will be constructed on concrete pilings with the floor elevation at 20.33 feet above sea level. A 20-foot wide concrete driveway will provide access to a parking area with 20 dedicated parking spaces for both the public and staff. Access to the parking area will be controlled by a gate. A perimeter fence will be installed around the staff parking area to provide additional security for vehicles. City water will be run to the facility and an aerobic septic system will be installed on site. Please see detailed plans Appendix A.

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposal and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (516 DM 8) and Service (550 FW 3) policies. NEPA requires examination of the effects of proposed actions on the natural and human environment. In the following chapters, two alternatives are described and environmental consequences of each alternative are analyzed.

### 1.2 Location:

The proposed location is on Texas Point NWR, Jefferson County, Texas at Lat/Long 29°42'32"N / 93°55'12"W, along Highway 87. The area of impact is specifically 2 acres located approximately 3 miles west of Sabine Pass, Texas and immediately south of Highway 87.



### **1.3 Background:**

Texas Point National Wildlife Refuge (NWR) is located in southeast Texas and is part of the Texas Chenier Plain National Wildlife Refuge Complex (Refuge Complex). Texas Point NWR is composed of 8,952 acres of coastal marsh and prairie that lies adjacent to the Gulf of Mexico and the Port Arthur Ship Channel. Texas Point NWR was established to preserve and protect migratory birds and other native fish and wildlife and the habitats upon which they depend. Texas Point NWR contains important coastal habitats and supports an abundance of wildlife including waterfowl, shorebirds, wading birds, other migratory birds, and American alligators.

Texas Point NWR was established in 1979, under the authority of the Migratory Bird Conservation Act (16 U.S.C. 715d), "...for use as an inviolate sanctuary, and for any other management purposes, for migratory birds." The Refuge Complex is administered by the USFWS, U.S. Department of the Interior, as a unit of the National Wildlife Refuge System. Lands or certain interests in lands added to the Refuge Complex since their original establishment were also acquired under the authority of the Migratory Bird Conservation Act, with the same establishment purpose.

The coastal marshes, prairies, and woodlots of the Texas Chenier Plain NWR Complex and the Chenier Plain region of southwestern Louisiana and southeast Texas comprise a hemispherically important biological area. These habitats are an important part of the primary wintering area for Central Flyway ducks and geese. Additionally, the coastal marshes, prairies, and prairie wetlands of the Chenier Plain region serve as a critical staging area for Central Flyway waterfowl migrating to and from Mexico and Central and South America. Hundreds of thousands of shorebirds, wading birds, other marsh and waterbirds, and neotropical migrants also winter or migrate through the region. Coastal prairie and coastal woodlots on the Refuges and adjacent areas support over 150 migratory and resident landbird species, including 9 species of grassland birds and 7 species utilizing woodland habitats listed as Rare and Declining within the Coastal Prairies Region of Texas (Shackelford and Lockwood 2000). The wetland, prairie, and woodland habitats on the Complex provide important habitat for 35 of the 48 avian species listed by the USFWS as Species of Conservation Concern in the Gulf Prairies Bird Conservation Region (USFWS 2004). The diversity and extensiveness of habitats makes the Complex and the Chenier Plain region highly valuable to local as well as hemispheric wildlife. Protection and management of this region provides benefits that stretch far beyond the Chenier Plain.

The high degree of alteration in this ecosystem has resulted in loss and degradation of native habitats, loss of biological diversity, and decreased habitat quality for migratory birds and other native wildlife. Alterations of historic hydrology including loss of freshwater inflows and increased saltwater intrusion, coastal erosion, land subsidence and sea level rise are contributing to ongoing coastal land loss and marsh degradation. Almost all of the region's historic native tall grass coastal prairie and its associated prairie wetlands have disappeared, and remaining coastal woodlots in the region are imminently threatened by development and other land use changes. Several highly invasive exotic plant species are replacing native habitats and severely impacting native biological diversity. Air and water quality issues in the region pose a potential contaminant threat to fish and wildlife, as do accidental spills and discharges from the major petrochemical shipping, storage and processing facilities located in close proximity to sensitive Refuge habitats. Habitat losses to date and ongoing threats in this ecosystem are such that intensive management of remaining habitats in combination with habitat restoration where feasible is required to conserve fish and wildlife resources.

### **1.4 Purpose and Need for Proposed Action:**

The purpose of this management action is to strategically replace the McFaddin and Texas Point NWRS office facilities in a location that will be more likely to weather large tropical storms during the summer and early fall months when development is probable. The McFaddin office and maintenance facilities were destroyed during Hurricane Ike. Rebuilding at the previous office site was unfeasible due to current

coastal erosion rates, attrition of dune protection, and probability of similar catastrophic losses in the future. The selected location for new office facilities on Texas Point NWR lie approximately 6 ft above sea level, and is protected by more than 2 miles of coastal marsh. While we understand similar circumstances may occur in this new location, additional precautions have been taken in the design of the building to diminish losses in the future. An example of this includes, additional elevation of the office floor by approximately 6.33 feet (for a total of 20.33 ft above ground level), and installation of “hurricane wind rated” doors and windows. Please see building design and specifications attached (Appendix 1).

### **1.5 Decision to be Made:**

This EA is an evaluation of the environmental impacts of the alternatives and provides information to help the Service fully consider these impacts and any proposed mitigation. Using the analysis in this EA, the Service will decide whether there would be any significant effects associated with the alternatives that would require the preparation of an environmental impact statement or whether the Proposed Action Alternative can proceed. The issuance of permits (e.g., Special Use) is not a consideration for this project, but rather environmental impact to this new location on existing refuge property is in consideration. This environmental assessment will be used to determine the path of least impact to the affected environment, and the most functional placement of facilities to carry out the mission of the USFWS.

### **1.6 Regulatory Compliance:**

This EA was prepared by the Service and represents compliance with applicable Federal statutes, regulations, Executive Orders, and other compliance documents, including the following:

- American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470)
- Clean Air Act of 1972, as amended (42 U.S.C. 7401 *et seq.*)
- Clean Water Act of 1972, as amended (33 U.S.C. 1251 *et seq.*)
- Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 *et seq.*)
- Executive Order 12898, Federal Action Alternatives to Address Environmental Justice in Minority Populations and Low Income Populations, 1994.
- Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661 *et seq.*)
- Floodplain Management (Executive Order 11988)
- National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 *et seq.*)
- National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.*)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 *et seq.*)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Protection of Wetlands (Executive Order 11990)
- National Pollutant Discharge Elimination System, as amended (33 U.S.C. 1251 *et seq.*)

Further, this EA reflects compliance with applicable State of Texas and local regulations, statutes, policies, and standards for conserving the environment and environmental resources such as water and air quality, endangered plants and animals, and cultural resources.

The U.S. Army Corps of Engineers (USACE) has been charged with the legal authority to protect the water resources of the United States, including vegetated wetlands, through Section 404 of the Clean Water Act. The USACE regulatory program supports the national goal of “no overall net loss” of wetlands through the sequencing process which ensures that any environmental impact on aquatic resources from construction projects, that would require discharge of dredge or fill material, where applicable, should avoid, minimize, or mitigate for these unavoidable impacts to the “waters of the U.S.,” including wetlands. A wetland delineation of the proposed project area determined that the project area was not located in jurisdictional wetlands that require USACE 404 permitting.

On October 19, 2009, the Texas State Historic Preservation Office provided a concurrence that the project was acceptable and that no historic properties were identified on the project site. Despite the lack of any resources of concern, contingencies are incorporated into all FWS construction contracts that allow for the proper treatment disposition of archeological sites if any are subsequently located during the construction phase of the project.

### **1.7 Public Involvement and Issues Identified:**

On September 22, 2009 the Service announced its intent to prepare an Environmental Assessment of alternatives for the construction of office facilities on Texas Point NWR, near Sabine Pass, Texas. A 14-day scoping period beginning September 22, 2009 was established under that notice. The Service provided a news release to The Beaumont Enterprise, The Progress, Dayton Press, The Baytown Sun, KLVI AM 560-news talk, KYKR FM 95.1-country, KKMV FM 104.5-mix, KIOC FM 106-rock, KCOL FM 92.5-oldies, Channel 6 KFDM TV-CBS, Channel 12 KBMT-ABC, Channel 4- NBC, KOLE News Radio, KVLU 91.3-Lamar University, Cumulus Broadcasting, The Houston Chronicle, News radio 740-KTRH & AM 790 ESPN (The Sports Animal), FM 88.7 KUHF-Houston Public Radio, FM 90.1 KPFT-Pacifica Radio, Channel 2 KPRC, Channel 11 KHOU-CBS, Channel 13 KTRK-ABC, Channel 26 KRIV-Fox, The Liberty Gazette, FM 99.9, The Vindicator, Thicket Trails, I-dineout.com, Port Arthur News, Mid-County Chronicle, The Examiner, and the Hometown Press were made and we sent out 33 faxes and emails to potential interested parties announcing the initial scoping period for development of this EA. Project summaries were also posted at the Port Arthur City Hall, Post Offices (Nederland and Port Arthur), the County Court House, and at Public Libraries (Nederland, Port Arthur) on September 22, 2009.

During the scoping period the Service received no response letters or emails with comments that were considered as part of this analysis.

## **2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION ALTERNATIVE**

### **2.1 Alternative A--No Action Alternative:**

Under Alternative A, the McFaddin and Texas Point NWR staff and associated other staff, including fire and law enforcement staff would continue to be housed in rented facilities located in Port Arthur, Texas.

### **2.2 Alternative B—Proposed Action**

The proposed action is to construct a new office facility at Texas Point NWR near Sabine Pass, Texas, which would replace the McFaddin and Texas Point National Wildlife Refuge office facilities that were destroyed during Hurricane Ike. This facility would be approximately 3,600 square feet, and consist of seven individual offices. The facility would be constructed on concrete pilings with the floor elevation at 20.33 feet above sea level. A 20-foot wide concrete driveway would provide access to a parking area with 20 dedicated parking spaces for both the public and staff. Access to the parking area would be controlled by a gate. A perimeter fence would be installed around the staff parking area to provide additional security for vehicles. City water would be run to the facility and an aerobic septic system would be installed on site. Construction of these facilities would impact approximately 5 acres. Please see detailed plans Appendix A.

This proposed building site is located approximately 3 miles west of Sabine Pass, Texas, and immediately south of Highway. This site was strategically chosen and placed on Texas Point NWR. The design and construction of the Texas Point Office will be designed to accommodate improvements intended to survive a storm surge equivalent to IKE or a 100 year flood event at the new location. Construction is set to begin in late April or early May with a completion date of 270 days following construction commencement.

### **2.3 Alternative Considered But Dismissed From Further Consideration**

Rebuilding facilities at McFaddin NWR was considered and ruled out as a viable option due to hurricane funding limitations.

### **3.0 AFFECTED ENVIRONMENT**

The Texas Chenier Plain Refuge Complex currently includes over 104,000 acres of public land managed and administered by the U. S. Fish and Wildlife Service as part of the National Wildlife Refuge System. The Refuge Complex includes four refuges: McFaddin NWR, Texas Point NWR, Anahuac NWR, and Moody NWR. McFaddin and Texas Point NWRs are located almost entirely in Jefferson County. Both refuges are bounded on the south by the Gulf of Mexico. Anahuac NWR is located on the north shore of East Galveston Bay. Almost all of Anahuac NWR lies within Chambers County.

Texas Point National Wildlife Refuge currently includes 8,952 acres of public land managed and administered by the U. S. Fish and Wildlife Service as part of the National Wildlife Refuge System. The Refuge is located entirely in Jefferson County, and is bounded on the south by the Gulf of Mexico, and on the east by the Port Arthur Ship Channel. Portions of the small town of Sabine Pass, Texas border the Refuge to the north.

The Refuge Complex lies within a biogeographical region known as the Chenier Plain (Gosselink *et al.* 1979). Geographically, the Chenier Plain region extends from Vermillion Bay in southwestern Louisiana to East Galveston Bay in southeastern Texas. A distinguishing feature of the region is the presence of cheniers, ridges representing the ancient Gulf shorelines which are generally aligned parallel to the Gulf or as fan-shaped alluvial deposits at the mouths of rivers. The higher cheniers support woody vegetation, hence the name chenier, a French word which means “place of oaks”. Cheniers are more prevalent in Louisiana than in Texas, perhaps because of the alignment of the Gulf shoreline and its proximity to the Mississippi River, the Chenier Plain region’s primary sediment source. Given the region’s significant annual rainfall, wetlands isolated from the Gulf by the cheniers developed into highly productive and diverse freshwater coastal marsh habitats.

#### **3.1 Physical Environment:**

Jefferson County is a broad, flat, poorly drained plain with slopes less than 3% and elevation mostly less than 11 m. The project area lies just south of the Highway 87 travel corridor.

##### **3.1.1 Air Quality:**

The Texas Commission on Environmental Quality (TCEQ) is the state agency responsible for regulating air quality in Texas. McFaddin NWR is within Region 10 of the TCEQ Air Quality Control Area. The major sources of air pollution in these regions are petroleum production, chemical production, shipping, and agriculture. Non-attainment areas are areas that have failed to meet federal standards for ambient air quality. The Refuge Complex is within two non-attainment areas for Eight-Hour ground level ozone (Houston- Galveston-Brazoria and Beaumont-Port Arthur) (TCEQ, Texas’ Attainment Status by Region). Burning is widely used as an agricultural management tool in the region to improve pasture and control undesirable vegetation. The TCEQ administers the Outdoor Burning Rule (Title 30, Texas Administrative Code, Sections 111.201 – 111.221), which regulates prescribed burning within the state. TCEQ is responsible for issuing authorization to prescribed burn, defining the conditions when burning will be permitted, and determining what materials may be burned.

##### **3.1.2 Soils / Geology:**

The Chenier Plain Region is part of a recent geologic plain. Most soils within the Refuge are remnants of ancient floodplains and Gulf of Mexico beaches and consist of old alluvium and marine sediment deposited by ancient streams and the Gulf of Mexico. These deposits are mostly clayey and sandy soils and exhibit a wide range in textural differences due to their origin within historic floodplain systems (USDA 1976). All Refuge lands are located within the 100-year floodplain. The soil types, both acidic



and alkaline, are poorly drained with slow permeability, moderate to high salinity, and a high shrink-swell potential (USDA 1960, USDA 1976).

The most prevalent soil association is the saline Harris-Made land association found within the Refuge intermediate, brackish, and saline marsh habitats. These areas consist of broad flats covered with coarse, salt tolerant vegetation. The flats are occupied mostly by Harris soils. This is the predominant soil type found in Texas Point NWR. Other wetland soils located in pockets within Refuge consist of the Crowley-Waller complex. Both the Crowley and Waller soil series are level, deep, poorly drained, loamy soils which have mottled lower layers and moderately high available water capacity. Salty prairie habitats are underlain with both natural soils which are deep moderately saline clays, and the Made land soils, which are stratified clay and loamy materials that have been excavated from canals, ditches, and bayous. These soils are affected by salt spray, storm tides, and salty high water tables restricting the kind and density of plants present.

Upland habitats (prairies and coastal ridges) of the Refuge are composed of the well-drained Sabine soils (predominantly acid Moray silt loam, Anahuac silt loam, and saline Veston loam). Coastal land soils are found on the lower slopes of these sandy ridges and along the Gulf. These soil types form the Sabine-Coastal land association. The shoreline of Jefferson County is made up of this Association and the Saltwater marsh-Tidal association. Coastal soils generally consist of deep, dark colored and slightly acidic sands. As remains of ancient Gulf of Mexico beaches, they are relatively low in nutrients. Specifically, the coastal soils differ dramatically in PH, color, texture, available water capacity, and drainage.

The project area's 6 mile-Gulf beach is composed primarily of tidal marsh and Galveston fine sand which have virtually no organic matter, are excessively drained, and have a low available water capacity. The Gulf beach within the McFaddin NWR has a high percentage of shell material, reflecting a recent scarcity of sand. Clay outcroppings from the underlying strata are exposed in many areas following erosive events such as hurricanes, tropical storms, and winter frontal passages.

### **3.1.3 Water Resources and Quality:**

The historical pattern of hydrology in the Chenier Plain region was critical to the building processes that created and maintained the diversity of its coastal wetlands. Frequent flooding over low bayou banks and large volumes of rainwater flowing slowly across coastal prairies and marshes provided nutrients, sediments, and freshwater to marsh systems. Natural drainage allowed a cyclic pattern of drying and flooding under which wetland plants evolved and adapted. Over the past 5,000 years, the Chenier Plain region was predominately a freshwater coastal marsh system, but contained a continuum of coastal marsh types associated with a natural salinity gradient. This continuum of freshwater, intermediate, brackish, and saline wetlands supported a diversity of floral and faunal communities.

Modifications of regional hydrology have affected ecological and geological processes critical to the long-term integrity of coastal ecosystems in the Chenier Plain region. In general, the primary human induced activities that have affected coastal wetlands include dredging of the Houston Ship Channel for navigation, canalization of the Trinity River, construction of the Gulf Intra-coastal Waterway (GIWW) into Galveston Bay, as well as construction of smaller navigation canals, oil, gas, and groundwater extraction. The consequences of these activities have resulted in various ecological responses, some of which are directly responsible for the onset of others (White and Tremblay 1995).

Agricultural lands supporting rice cultivation within the surrounding lands contribute nutrients and toxins to surface waters within coastal watersheds. The application of herbicides is used in the farming of rice, soybeans, sorghum, and hay. Rice farming dominates in this area of the Texas Chenier Plain. Concentrations of herbicides are generally greatest during May, June, and July with the lowest concentrations occurring in the fall and winter. The herbicide, Molinate, is the most commonly used

chemical on rice and was found in the highest concentrations of the herbicides (USGS, Open-File Report, 96-124). Both Atrazine and Metolachlor were detected in about 70% of the water samples taken in the National Water Quality Assessment Program (*ibid*) for the coastal prairie agricultural area of the Trinity River Basin. The insecticides, Carbofuran and Diazinon, were the most commonly detected chemicals, but they were only found in less than 25% of the samples taken (*ibid*). The values for Atrazine and Carbofuran were less than the Maximum Contamination Level (MCL) set by EPA for drinking water (NAWQA Fact Sheet 1994). There are no MCL values set by the EPA for Metolachlor, Molinate, or Diazinon for drinking water or aquatic organisms in fresh or saltwater. Currently, no water quality information is available regarding chemicals and other suspended materials at the project site location.

### **3.2 Biological Environment:**

#### **3.2.1 Vegetative Communities:**

Most upland habitats within the project area are comprised of prairie and prairie components, with small motts of brush being common in upland areas and in association with fence lines along northern sections of the Refuge. Other upland habitats found in the project area and on the Refuge Complex include beach ridges/dunes and small coastal woodlots located on the chenier ridges or on elevated features (both natural and manmade) including bayou banks and levees.

Wetland habitats adjacent to the project area include coastal marshes, natural and man-made wetlands (livestock ponds) associated with upland prairies inland of the marshes, open water wetlands, bayous and other waterways. Wetland habitats include estuarine, palustrine, riverine and lacustrine wetlands (Moulton *et al.* 1997).

The intermediate, brackish and saline emergent coastal marshes found on the Refuge Complex are classified as estuarine inter-tidal emergent wetlands (USFWS, National Wetlands Inventory). Freshwater wetland habitats within the Complex include palustrine emergent marsh (fresh marsh and wet prairie) and some natural “prairie wetlands.” Estuarine inter-tidal emergent, palustrine emergent, and palustrine forested wetlands are all recognized as nationally-declining wetland types (USFWS, National Wetlands Inventory).

#### **3.2.2 Wildlife:**

##### ***Wintering and Resident Waterfowl***

A priority objective of the Refuge Complex is to provide quality habitat for wintering waterfowl. The Refuge Complex is part of the southern terminus in the U.S. for most of the ducks and geese in the Central Flyway, and some waterfowl from the Mississippi, Atlantic, and Pacific Flyways also winter here. The 2004 mid-winter waterfowl survey for the Central Flyway indicates that 7,901,489 waterfowl used the Central Flyway. Of those birds, 5,110,022 waterfowl (65%) wintered in Texas. The coastal marshes, wet prairies, rice fields and moist soil units of the Refuge Complex are used by 27 species of ducks and five species of geese.

The USFWS conducts aerial waterfowl surveys monthly from September through March on national wildlife refuges on the Texas Gulf Coast. McFaddin/Texas Point NWRs had a mean high count of 84,226 ducks and 36,935 geese for that same period. The most common duck species observed were green-winged teal (*Anas crecca*), gadwall (*Anas strepera*), northern shoveler (*Anas clypeata*), blue-winged teal (*Anas discors*) and northern pintail (*Anas acuta*). Snow geese (*Chen caerulescens*) are the principal goose species found on the refuges. Other geese include greater white-fronted (*Anser albifrons*) and Ross’s geese (*Chen rossii*). “White-cheeked” type geese are commonly counted on the Refuge, most of which are presumed to be cackling geese (*Branta hutchinsii*).

Nine of the 27 species of waterfowl found on the Refuge are listed by the USFWS’ Migratory Bird Office as a “Game Bird Below Desired Condition” (USFWS 2004). They include: canvasback (*Aythya*

*valisineria*), mallard (*Anas platyrhynchos*), mottled duck (*Anas fulvigula*), northern pintail, redhead (*Aythya americana*), ring-necked duck (*Aythya collaris*), greater scaup (*Aythya marila*), lesser scaup (*Aythya affinis*), and wood duck (*Aix sponsa*). Snow goose and Ross's goose are listed as "Over Abundant".

Essentially non-migratory, the mottled duck is tied to coastal habitats for its entire life cycle. Mottled ducks are year-round residents in fresh, intermediate and brackish marshes as well as suitable agricultural areas on the Complex. They typically nest in gulf and marshhay cordgrass on dryer areas and utilize adjacent wetlands for raising broods. The Upper Texas Gulf Coast, including the Refuge Complex, has historically been considered the core of mottled duck habitat in Texas. Wetland and grassland habitats and rice agricultural lands here continue to be extremely important to the Western Gulf Coast Mottled Duck population.

### ***Shorebirds, Wading Birds, Marsh, and Waterbirds***

The tidal flats, beaches, and marshes on the Refuge provide shallow water feeding, breeding, and resting habitat for numerous shorebirds, wading birds, and other marsh and waterbirds. Thirty-two species of shorebirds regularly occur on the Refuge, ten of which are considered 'highly imperiled' or of 'high concern' under the U.S. Shorebird Conservation Plan (Brown et al. 2000).

Shorebird counts were conducted along the Texas Coast between March 22 and May 17 during two week intervals in the spring of 1993. The most abundant species observed during the surveys were American avocet (*Recurvirostra americana*), western sandpiper (*Calidris mauri*), long-billed and short-billed dowitchers (*Limnodromus scolopaceus* and *L. griseus*, respectively), semipalmated sandpiper (*Calidris pusilla*), pectoral sandpiper (*Calidris melanotos*), black-bellied plover (*Pluvialis squatarola*), dunlin (*Calidris alpina*), sanderling (*Calidris alba*), willet (*Catoptrophorus semipalmatus*), semi-palmated plover (*Charadrius semipalmatus*), least sandpiper (*Calidris minutilla*), and snowy plover (*Charadrius alexandrinus*). All of these species occur on the Refuge. Common nesting shorebirds species on the Refuge Complex include killdeer (*Charadrius vociferus*), black-necked stilt (*Himantopus mexicanus*), and willet.

Colonies of nesting birds including least terns (*Sterna antillarum*) and black skimmers (*Rynchops niger*) occur on beaches, washover terraces, and occasionally on man-made sites such as oil and gas well pads. On the Refuge, nesting wading, marsh and waterbird species include least bittern (*Ixobrychus exilis*), purple gallinule (*Porphyryla martinica*) common moorhen (*Gallinule Chloropus*), and pied-billed grebe (*Podilymbus podiceps*). All six North American species of rails occur in the marshes and wet prairie grasslands of the Refuge. King and clapper rails (*Rallus elegans* and *R. longirostris*, respectively) nest here and are present year-round. The black rail (*Laterallus jamaicensis*) has not been documented as nesting on the Refuge, but is also present year-round. Sora (*Porzana carolina*), Virginia and yellow rails (*Rallus limicola* and *Coturnicops noveboracensis*) utilize these habitats in high densities during the winter and young birds have been seen during late summer.

### ***Migratory and Resident Landbirds***

Many passerines that nest in temperate North America and winter in Central and South America migrate through the project area, crossing the Gulf of Mexico during spring and fall migrations. During spring migration coastal woodlots and other wooded habitats in the project area provide the first landfall for these trans-Gulf neotropical migrants. Migrant passerines that use the Refuge include many species of warblers, vireos, tanagers, thrushes, and buntings, including many Avian Species of Conservation Concern. Songbird species nesting on the Refuge include the orchard oriole (*Icterus spurius*), Eastern kingbird (*Tyrannus tyrannus*), and scissor-tailed flycatcher (*Tyrannus forficatus*).

Upland grassland habitats on the Refuge provide wintering and/or migrational habitat for several grassland songbird species including LeConte's sparrow (*Ammodramus leconteii*) and bobolink (*Dolichonyx oryzivorus*), and nesting habitat for species including dickcissel (*Spiza americana*) and Eastern meadowlark (*Sturnella magna*). These are also important nesting habitats for mottled ducks.

Several species of raptors commonly observed on the Refuge include red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), Northern harrier (*Circus cyaneus*), and short-eared owl (*Asio flammeus*). Many other raptor species are observed during spring and fall migrations.

### ***Fisheries Resources***

The region's coastal fishery is classified as a warm water fishery resource with moderate to high numbers of salt and brackish water species occurring in the Gulf of Mexico and large estuarine bay systems. Over 95% of the marine organisms found in the Gulf of Mexico depend on estuarine habitats (salt, brackish, and intermediate marshes) for their survival, and estuaries are often referred to the food pantry for the ocean. This natural resource base is the cornerstone of a very important commercial and sport fishing industry based on the harvest and sale of seafood. Millions of tons of penaid shrimp, crabs, finfish, oysters, clams, and other marine life are dependent on the biological richness afforded by the estuaries. Segments of the estuarine habitats are important nursery habitats for a variety of living marine resources, especially in their early life stages.

Estuarine marshes and associated habitats have been identified by the Gulf of Mexico Fishery Management Council (GMFMC) as Essential Fish Habitat (EFH) for juvenile white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecus*), and juvenile red drum (*Sciaenops ocellatus*). EFH known to occur in the project area includes estuarine emergent wetlands, estuarine mud, sand and shell substrates, submerged aquatic vegetation, and estuarine water column. Detailed information on red drum, shrimp, and other Federally managed fisheries and their EFH is provided in the 1998 amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the GMFMC. The 1998 EFH amendment was prepared as required by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (P.L. 104 - 297).

### ***Mammals***

Some of the more common mammals on the Refuge Complex include raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), bobcat (*Lynx rufus*), nine-banded armadillo (*Dasypus novemcinctus*), swamp cottontail rabbit (*Sylvilagus aquaticus*), Virginia opossum (*Didelphis virginiana*), muskrat (*Ondatra zibethicus*), nutria (*Myocaster coypus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), and feral hog.

### ***Reptiles, Amphibians, and Invertebrates***

Common reptiles in the project area and on the Refuge include the American alligator (*Alligator mississippiensis*), western cottonmouth (*Agkistrodon piscivorus*), speckled kingsnake (*Lampropeltis getula*), red-eared slider (*Trachemys scripta*), and snapping turtle (*Chelydra serpentina*). Common amphibians include the pig frog (*Rana grylio*), southern leopard frog (*Rana sphenoccephala*), Gulf Coast toad (*Bufo valliceps*), and bullfrog (*Rana catesbeiana*). The lesser siren (*Siren intermedia*) and three-toed amphiuma (*Amphiuma tridactylum*) are probably common though seldom-seen amphibians found in freshwater habitats.

Alligators currently occur in over 90% of their historic range with the largest concentrations in Texas occurring in the middle and upper coastal counties and suitable inland habitats. Preferred habitats include river valleys, streams, oxbow lakes, marshes, swamps, estuaries, bayous, and slow moving creeks where they will feed on various species of fish, turtles, snakes, and mammals such as nutria and muskrat.

American alligator populations on the Refuge have trended upward since surveys of this species were initiated in the mid-1980s (USFWS unpublished data). Alligators now can be found in all wetland habitats on the Refuge. Information on the current status of the alligator population are unavailable and population impacts from Hurricane Ike have not yet been quantified.

Invertebrate populations are an essential food resource for migratory birds and estuarine fishery species. Various amphipods, midges, mysid shrimp, grass shrimp, crayfish, and numerous crabs are present within all marsh habitats in the project area. Some of these invertebrate populations occur in tremendous quantities. Mosquitoes, biting flies, chiggers, and imported fire ants (*Solenopsis invicta*) are other common invertebrates. Common butterfly species include monarch (*Danaus plexippus*), little yellow (*Pyrisitia lisa*) and Gulf fritillary (*Agraulis vanillae*) butterflies. Common dragonfly species include the common green darner (*Anax junius*) and seaside dragonlet (*Erythrodiplax berenice*).

### **3.2.3 Threatened and Endangered Species and Other Special Status Species**

Several Federally-listed Threatened and Endangered Species (T&E species), listed under the Endangered Species Act of 1973, occur within the project area. Several recent actions by the USFWS under the Endangered Species Act have changed the status of Threatened and Endangered species occurring within the project area. In 1999, the USFWS de-listed and removed the Arctic peregrine falcon from the list of T&E species. The bald eagle was down-listed from Endangered and reclassified as Threatened in 1995.

There are no known Federally-listed Threatened or Endangered plant species present on the Refuge Complex.

Three species of sea turtles, the Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*) and hawksbill (*Eretmochelys imbricata*) are federally-listed as Endangered, and two species, the loggerhead (*Caretta caretta*) and green (*Chelonia mydas*), are federally-listed as Threatened. All five species occur in the region's nearshore Gulf waters, and the Kemp's ridley, loggerhead and green sea turtles can be found in shallow bays typical of East Galveston Bay adjacent to the Anahuac NWR. Strandings of dead and injured sea turtles occasionally occur along the Gulf shoreline within the Texas Point and McFaddin NWRs.

The brown pelican (*Pelecanus occidentalis*) is Federally-listed as Endangered. Its listing status is currently being reviewed by the USFWS. Populations in coastal Texas appear to be increasing. New nesting colonies have recently been documented in Galveston Bay (USFWS, unpublished data). Within the project area, brown pelicans typically congregate on open waters and along shorelines of the Gulf, Galveston Bay, Sabine Lake, and the GIWW. On the Refuge Complex, they are frequently observed in small to medium flocks on the Gulf shoreline within the Texas Point and McFaddin NWRs, and are frequently observed flying over all of the refuges.

The Gulf Coast of Texas attracts a large population of wintering piping plovers (*Charadrius melodus*), a Federally-listed Threatened species. In 2001, the USFWS designated Critical Habitat for the wintering piping plovers in Texas. Piping plovers are normally only observed in small numbers on the Gulf beaches of McFaddin and Texas Point NWRs during spring and fall migration. There have been no records to date of nesting piping plovers on the Refuge Complex.

The American alligator received protection under the Endangered Species Act in 1974, when they were listed as Endangered. Following population increases, the listing status was changed to Threatened due to similarity of appearance with the Endangered American crocodile.

The Refuge Complex lies within the historic ranges of four Federally-listed T&E species: Attwater's Prairie Chicken (*Tympanuchus cupido attwateri*), red wolf, Eskimo Curlew (*Numenius borealis*), and West Indian Manatee (*Trichechus manatus*). These species have been extirpated within the region.

### **3.3 Human Environment:**

The population of Jefferson County was estimated to be 241,332 in 1999, an increase of 1,935 people over the 1990 census of 239,397. The largest population centers in Jefferson County are Beaumont and Port Arthur with populations of 114,323 and 58,724 respectively in 1990.

The labor force in the metropolitan statistical area in Jefferson County was estimated at 120,439, approximately 109,880 of which are employed, leaving a 9.6% unemployment rate in 2003. The major employment industries in the county include manufacturing, construction, services, trade, and government. The major employers in Port Arthur include the correctional facilities, school district, St. Mary hospital, Tenet Mid-Jefferson/Park Place (medical service), and various petrochemical manufacturing and petroleum refining companies.

The 1999 estimated median household income for Jefferson County was \$34,706 (U.S. Census Bureau 2001).

#### **3.3.1 Cultural Resources:**

The Refuge Complex has not been fully surveyed for cultural resources. Surveys that have occurred are usually initiated on a project-specific basis, such as for oil and gas or water projects, to comply with the requirements of Section 106 regulations of the National Historic Preservation Act (NHPA), 36 CFR Part 800. Shell middens are the primary cultural resource identified through previous project-specific surveys. No properties have been identified to date on the Refuge that are listed on the National Register of Historic Places (NRHP).

On October 19, 2009, the Texas State Historic Preservation Office provided a concurrence that the project was acceptable and that no historic properties were identified on the project site. Despite the lack of any resources of concern, contingencies are incorporated into all FWS construction contracts that allow for the proper treatment disposition of archeological sites if any are subsequently located during the construction phase of the project.

#### **3.3.2 Socioeconomic Resources:**

The project site is located approximately 3 miles from the city of Sabine Pass, Texas with a population of 2,218 in July 2007. Several other small towns are also within 30-90 miles away, and the Beaumont Metro Area is approximately 35 miles north and slightly east of the Refuge. The predominate land uses in the vicinity of the refuge are grazing, residential areas, and some oil and gas development. The Port Arthur Chamber of Commerce lists the refuge as one of the area's main attractions. The Refuge is open for hunting, fishing, wildlife observation and photography, and other wildlife dependent recreation. The refuge also plays a role in the local economy as refuge employees typically live in the surrounding communities, own property, and support local businesses through routine purchases.

#### **3.3.3 Public Use/Recreation:**

The Refuge offers a variety of recreational opportunities to visitors. All six priority wildlife dependent recreational uses of the National Wildlife Refuge System are offered on the Refuge Complex. These include hunting, fishing, wildlife observation, photography, environmental education and interpretation. Refuge visitors contribute to local and regional economies through tourism-related purchases and expenditures, and nature tourism is an important and growing industry in the region and in Texas as a whole.

### ***Hunting***

Waterfowl hunting has been a tradition along the upper Texas coast for generations. Prior to the establishment of the refuges, all three refuges were hunted through private ownership or lease. Currently, waterfowl hunting is offered on the Refuge, ranging from free, first-come, first-serve programs to a more formal fee permit reservation system. Different hunt units are open on different days of the week to provide hunting opportunities throughout the week, as well as periods of rest for waterfowl. Approximately 40% of the Refuge is open for waterfowl hunting, the maximum allowable on lands acquired under authority of the Migratory Bird Conservation Act, (16 U.S.C. 715d.).

### ***Fishing***

Saltwater fishing opportunities are available on the Refuge Complex. On Texas Point NWR, saltwater fishing opportunities are found along 6 miles of beach along the Gulf of Mexico, in Texas Bayou, and in designated areas along the shoreline of the jetties.

### ***Wildlife Observation and Photography***

Wildlife inhabiting the coastal marshes, prairies and woodlands on the Refuge are abundant and diverse. Dozens of migratory bird species utilize habitat on the refuges to feed, rest, and nest. Over 27 species of waterfowl can be found throughout the winter months, and flocks of snow geese in excess of 100,000 can sometimes be seen. Spring and fall are prime time for migrating shorebirds and songbirds. Migrating shorebirds primarily utilize beach areas and mudflats on Texas Point NWR. Small and colorful Neotropical songbirds can be found in the small woodlands or riparian corridors located primarily on Highway 87 of Texas Point NWR. Of special interest to the birding community are the secretive rails that occupy refuge marshes. All six species of North American rails can be found on the Refuge Complex at some time during the year. In addition, resident waterbirds are visible in wetland habitats throughout the year.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

This chapter analyzes and discusses the potential environmental effects or consequences that can reasonably be expected by the implementation of the alternatives described in Chapter 2.0 of this EA. An analysis of the effects of management actions has been conducted on the physical environment (air quality, water quality, and soils); biological environment (vegetation, wildlife, and threatened and endangered species); and socioeconomic environment (cultural resources, socioeconomic features including public use/recreation). The direct, indirect, and cumulative impacts of each alternative are considered. Direct effects are the impacts that would be caused by the alternative at the same time and place as the action. Indirect effects are impacts that occur later in time or distance from the triggering action. Cumulative effects are incremental impacts resulting from other past, present, and reasonably foreseeable future actions, including those taken by federal and non-federal agencies, as well as undertaken by private individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time.

### **4.1 Physical Environment:**

#### **4.1.1 Impacts on Air Quality:**

##### Alternative A--No Action Alternative:

No impacts to air quality are expected from continuation of current management.

##### Alternative B:

The proposed action may result in some short-term negative impacts at a local scale, as a result of the use of heavy equipment and large trucks to build and haul building materials. Temporary impacts to air quality from dust and emissions produced by heavy equipment would be minimal and would be undetectable after the project is implemented.

#### **4.1.2 Impacts on Water Quality and Quantity**

##### Alternative A--No Action Alternative:

No impacts to water quality or quantity are expected from continuation of current management.

##### Alternative B-- (Proposed Action)

This alternative may result in some short-term negative impacts at a local scale, due to dirt work to be conducted, sedimentation in run-off water may increase into an existing stock tank or into roadside ditches. However, impacts are expected to be minimal and best management practices (BMPs) would be implemented to minimize or prevent sedimentation issues related to construction projects. These impacts, in a worst case situation, would only last for the duration of the construction period.

#### **4.1.2 Impacts on Soils:**

##### Alternative A--No Action Alternative:

No impacts to soils are expected from continuation of current management.

##### Alternative B--

This alternative would result in local adverse impacts due to soil disturbance up to 6 feet deep and covering of soils by buildings and parking facilities (approximately 36,450 square feet). Elevations in some areas also may be altered slightly. Erosion rates in the immediate construction area are likely to increase slightly due to the removal of vegetation. Best management practices (BMPs) would be utilized by construction contractors to minimize any loss of soils due to erosion issues.

#### **4.2 Biological Environment:**

##### **4.2.1 Impacts on Habitat:**

##### Alternative A--No Action Alternative:

This alternative would have some positive and some negative impacts on biological resources of the Refuge. Positive impacts would be evident by a lack of physical structure on the Refuge. However, keeping Refuge staff away from the management area will make managing for species abundantly more difficult and costly, resulting in fewer management actions to benefit natural resources and species.

Wildland fire personnel will continue to be housed out of offices in Port Arthur, Texas. This will increase response times of emergency personnel to wildfires located on Refuge property and along wildland urban interfaces of Refuge property. Also, maintaining facilities in Port Arthur, Texas will increase time and cost to carry out essential habitat management programs such as prescribed burning. Equipment needed to suppress wildland fires or to conduct prescribed burns will not be located on site and will require additional time and maintenance due to trailering of equipment to the Refuge. Refuge personnel will also be exposed to increased hours and will increase job hazard probability.

The Refuge will also continue to maintain an increased carbon footprint, as fossil fuels will continue to be used to transport personnel from the Port Arthur, Texas area to the Refuge.

##### Alternative B-- (Proposed Action)

This alternative would have long-term and short-term impacts on habitat within Texas Point NWR. Short-term impacts would occur during the construction phase of the project, and they include cutting and clearing of trees and other vegetation and disturbance of subsurface and soils (less than 2 acres).

All building activities would occur in upland locations on Texas Point NWR, and would remove invasive and exotic species (e.g., Chinese tallow [*Sapium sebiferum*], McCartney Rose [*Rosa bracteata*], *Acacia* spp., and honeysuckle [*Lonicera japonica*]) from the area. Herbicide treatments on the property would also be conducted to promote the growth of native vegetation. Few adverse impacts are expected from herbicide use as the USFWS would use a licensed applicator, and would be spot treating invasive



vegetation rather than using a broadcasting technique. Only wetland rated chemicals and non-ionic surfactants would be used to treat in this area due to its proximity to wetlands and wetland species.

This alternative would be implemented in a manner that minimizes negative impacts to habitat (e.g., positioning building so that the USFWS can conserve trees in the area, planting with native flora, etc.). Construction activities would occur for a minimal period of time. Short-term and long-term benefits are expected to far outweigh the loss of this small acreage of habitat.

This alternative would put biological and management staff back in close relation to the properties we manage, which will help carry out habitat management actions more thoroughly and efficiently.

#### **4.2.2 Impacts on Wildlife:**

##### Alternative A--No Action Alternative:

Under the No Action Alternative, the existing habitat conditions would be maintained. There would be no change in diversity or abundance of wildlife that use the area.

##### Alternative B-- (Proposed Action)

There would be some short-term adverse impacts on small mammals, birds, and other wildlife due to habitat loss and displacement during project implementation period; however, similar habitat is abundant in the area and no loss of species diversity or abundance is likely. The possible short-term decline in wildlife numbers is not expected to be enough to affect the area's overall wildlife population.

The project is slated to being in the late spring or summer of 2010 (pending all permits and other required environmental clearances (e.g., completed NEPA documents). Construction of this facility is not expected to take longer than one year, however if major delays are experienced the construction date and duration also may be delayed. Nesting of most bird species in the area would have terminated by the implementation date, and disturbance in the area should discourage nesting of birds within the construction period.

#### **4.2.3 Impacts on Threatened and Endangered Species and Special Status Species:**

##### Alternative A--No Action Alternative:

Under the no action alternative, the existing habitat conditions would be maintained. There would be no impact to Threatened and Endangered Species.

##### Alternative B-- (Proposed Action):

Under alternative B, the existing habitat conditions would be altered slightly, however impacts to the overall habitat availability are not suspected to be significant. There would likely be no impact to threatened and endangered species.

#### **4.3 Human Environment:**

##### **4.3.1 Impacts on Cultural Resources:**

##### Alternative A--No Action Alternative:

No impacts to cultural resources are expected from continuation of current management.

##### Alternative B:

Activities undertaken by alternative B are not expected to affect cultural resources. The project area has been surveyed by the State Historic Preservation Office and no cultural or archeological artifacts or sites were located.

##### **4.3.2 Impacts on Socioeconomics**

##### Alternative A--No Action Alternative:

Socioeconomic conditions could be affected under the no action alternative due to the loss of potential revenue through the surround community if duck hunter use decreases due to lack of personnel at the Refuge to administrate the hunting program. Additionally, State facility operators are willing to house USFWS equipment and personnel for a short period of time, however more permanent rental facilities would have to be located within the next 2 years. Furthermore, costs for facilities rental for office space and storage of equipment will continue to be a drain on Refuge operating budgets and will result in an increased cost to tax payers. During periods of reduced funding the rental of facilities is a required recurring payment that could drain management capabilities on the refuge. This could affect visitation associated with wildlife watching, hunting, photography and several other groups of visitors.

Finding rental space adequate to accommodate the refuge's long term needs will be difficult. Separation of the employees from their equipment fleet will likely lead to accelerated dilapidation of equipment. Which would increase maintenance of all equipment including; large trucks (heavy haul, dump truck, semi-truck), backhoe, trackhoe, amphibious trackhoe, road grader, rolligons, marsh masters, farm tractors, airboats, other boats, and various other small pieces of equipment. Accelerated maintenance needs would likely increase operating budgets significantly and require additional staff to assist with maintenance and mechanical needs of the machinery. Additionally, machinery would be trailered to the Refuge on a regular basis for routine work. Requiring substantially more resources than previous management actions required. Increased travel to and from the Refuge to temporary office facilities would dramatically increase fuel needs among Refuge activities and personnel and will more than triple our previous carbon foot print.

#### Alternative B-- (Proposed Action)

The proposed action would have a positive impact on the local economy through increasing visitor services and facilities located in our region of Texas. The actual construction phase of building the office may bring a slight increase to the economy in the Sabine Pass, Texas with incidental parts and other materials being purchased locally by contractors. Also, local labor may be utilized for portions of construction activities. Local convenience stores and restaurants would see short-term benefits from construction activities. A slight increase in business for these type facilities would be likely related to increased visitation and recognition of the refuges from having the office in the area of Sabine Pass.

Emergency refuge personnel (fire and law enforcement) would have shortened response times, especially during regular business hours. And equipment will be housed within the property we manage making management actions easier to carry out and administrate.

Shortened distances traveled by Refuge vehicles would decrease our carbon footprint back to a level more commiserate with previous levels, and fuel use would be greatly decreased providing a large savings to the government and thus tax payers.

Though this alternative may result in higher quality and more opportunity for visitor experiences, there would likely be minimal impact on overall Refuge visitation. This would result in a neutral to slightly positive impact. Refuge facilities at Texas Point NWR may benefit the local area by increasing visitor use of the area. Local restaurants and other vendors would likely experience increases in business due to increased visitation of the Refuges.

#### **4.3.3 Public Use/Recreation**

##### Alternative A--No Action Alternative:

Implementation of the no action alternative would negatively impact wildlife recreational programs on the Refuge. Lack of staff to conduct hunt and environmental education infrastructure would likely cripple programs because of inherent increased costs to maintain current service levels.

Response of conservation officers to wildlife and resource issues will also increase due to travel time from Port Arthur, Texas.

#### Alternative B:

The presence and operation of the Refuge office would be expected to have positive impacts on public use/recreation opportunities on the Refuge Complex. Establishing infrastructure on Refuge grounds and maintaining essential personnel (e.g., law enforcement officers) would enhance visitor opportunity to enjoy the resources the Refuges of this area have to offer in a safe manner. Also, putting biological staff, interpreters, and managers back on the Refuge will provide for daily interactions with the public and the opportunity to conduct more personal environmental education for visitors.

#### **4.4 Assessment of Cumulative Impacts:**

A cumulative impact is defined as an impact on the environment that results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future action regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Cumulative impacts are the overall, net effects on a resource that arise from multiple actions. Impacts can “accumulate” spatially, when different actions affect different areas of the same resource. They can also accumulate over the course of time, from actions in the past, the present, and the future. Occasionally, different actions counterbalance one another, partially canceling out each other’s effects on a resource. But more typically, multiple effects add up, with each additional action contributing an incremental impact on the resource.

The planned location lies alongside Highway 87, which is a cleared and paved travel corridor. Clearing of trees and other vegetation has occurred along this corridor, and USFWS clearing of the site to construct office and visitor center facilities may have cumulative effects within a very small area. However, cumulative impacts from clearing this small acreage are not expected to cause long-term adverse effects on the local environment.

The planned location is located approximately 3 miles west of Sabine Pass, Texas. Building this type of facility within a rural residential area may increase traffic and road noise near some Jefferson County resident’s homes. However, impacts are expected to be minimal to private landowners surrounding the Refuge.

Beyond increases in traffic to the local area, the refuge is not aware of any past, present or future planned actions that would result in a significant cumulative impact when added to the refuge’s proposed action, as outline in alternative C. The adverse direct and indirect effects of the proposed action on air, water, soil, habitat, and wildlife are expected to be minor and short-term.

#### **4.5 Environmental Justice:**

None of the alternatives described in this EA will disproportionately place any adverse environmental, economic, social, or health impacts on minority and low income populations. Implementation of the proposed action is anticipated to be positive for the environment over the long-term and people in the surrounding communities.

#### **4.6 Indian Trust Assets:**

No Indian Trust Assets have been identified in the Sabine Pass, Texas vicinity. There are no reservations or ceded lands present. Because resources are not believed to be present, no impacts are anticipated to result from implementation of either alternative described in the EA.

#### 4.7 Irreversible and Irretrievable Commitment of Resources:

Project implementation would require the irretrievable commitment of fossil fuels (diesel and gasoline), oils, and lubricants used by heavy equipment and vehicles for a short period of time (i.e., less than 12 months). The Proposed Action will result in unavoidable harm or harassment to some wildlife, however this harassment will be short in duration and will be avoided when possible. The Service would implement best management practices to minimize potential impacts.

**4.8 Table 1 - Summary of Environmental Effects by Alternative:**

<b><u>Environmental Resources</u></b>	<b><u>Alternative A:</u> No Action Alternative</b>	<b><u>Alternative B:</u> Proposed Action Alternative</b>
Impacts to Air Quality	No effect	Slightly direct negative (short-term), long-term slight indirect negative
Impacts to Water Quality and Quantity	No effect	Slightly direct negative (short-term)
Impacts to Soils	No effect	Slightly direct and indirect negative effect (short-term and long-term)
Impacts on Habitat	Direct Positive (lack of infrastructure) Indirect Negative (lack of personnel)	Short-term direct slight negative effect; long-term indirect slight negative effect (habitat degradation)
Impacts of Wildlife	No effect	Short-term direct slight negative effect (disturbance); long-term direct/indirect slight negative effect (small acreage of habitat lost)
Impacts on Threatened and Endangered Species	No effect	No effect expected
Impacts on Cultural Resources	No effect	No effect expected
Impacts on Socioeconomic Resources	Direct negative (increased carbon footprint); indirect negative (lack of personnel, increased operating budget, exposure of personnel)	Short-term and long-term direct/indirect positive effect
Impacts on Public Use and Recreation	Direct and indirect negative effects	Positive direct/indirect effect

## **5.0 CONSULTATION, COORDINATION AND DOCUMENT PREPARATION**

Document prepared by Biological Staff, Jena Moon/Patrick Walther; McFaddin and Texas Point National Wildlife Refuges and Texas Chenier Refuge Complex, respectively; U.S. Fish and Wildlife Service, Sabine Pass, Texas.

### **5.1 Agencies and individuals consulted in the preparation of this document include:**

State Historic Preservation Office  
Jeff Johns, Region 2 Engineering Office  
Stephanie Martinez, Texas Chenier Plain NWR  
Tim Cooper, Texas Chenier Plain NWR  
Dean Bossert, McFaddin NWR  
Michelle Chappell, Texas Point NWR  
Craig Crenshaw, Texas Chenier Plain NWR  
Carol Torrez, NEPA Coordinator, R2 NWRS

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## **APPENDIX**

### **APPENDIX A- Detailed Plans of Texas Point Office Layouts.**

# Appendix A

